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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/318,614	05/26/1999	HIDEFUMI OKADA	990531	1681

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ARMSTRONG, WESTERMAN & HATTORI, LLP
1725 K STREET, NW
SUITE 1000
WASHINGTON, DC 20006

EXAMINER

GENCO, BRIAN C

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 03/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/318,614

Applicant(s)

OKADA, HIDEFUMI

Examiner

Brian C Genco

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 13-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 13, 14, 21, 22, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by (USPN 5,933,137 to Anderson).

In regards to claim 13 Anderson discloses a digital camera comprising:

an image sensor for taking a subject and outputting original image data by a scan scheme (e.g., imaging device 114 (column 4, line 11) wherein the data is inherently output in a “scan scheme”);

a main memory (e.g., RAM disk 532 portion of the DRAM 346 shown in Fig. 4A); an original writing circuit for writing said original image data to said main memory (e.g., “RAM spooler 1 (620) transfers the raw image data to the RAM disk 532 (column 10, lines 17-18)”);

a processor for creating a thumbnail image data based on said original image data (e.g., resizing process 616; column 9, lines 28-38);

a buffer (e.g., working memory 530 and input buffers 538 portions of the DRAM 346 shown in Fig. 4A);

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a first thumbnail writing circuit for writing to said buffer thumbnail image data outputted from said processor (e.g., "after the thumbnail image 606 and the scrennail 608 are generated, they are stored in working memory 530 (column 9, lines 39-41)");

a second thumbnail writing circuit for writing to said main memory thumbnail image data stored in said buffer each time a first predetermined lines of original image data is written to said main memory (e.g., "The compressed image data 604 is then combined with the thumbnail 606 and the scrennail 608 to generate the enhanced image data file (Fig. 6), and the RAM spooler 2 (620) transfers the compressed image data file 600 to the RAM disk 532 (column 10, lines 36-40)", wherein RAM spooler 2 is the "second thumbnail writing circuit" and the "first predetermined lines of original image data" is all of the lines of original image data).

In regards to claim 14 Anderson discloses a digital camera according to claim 13, wherein

a second predetermined lines of thumbnail image data is associated with said first predetermined lines of original image data (e.g., all of the lines of thumbnail image data which were extracted from the first predetermined lines of original image data), and

said buffer including a thumbnail area to store said second predetermined lines of thumbnail image data (e.g., in order to store the thumbnail image data the working memory must have area to store the second predetermined lines of thumbnail image data).

In regards to claim 21 Anderson discloses a digital camera according to claim 13, wherein

said original writing circuit includes a first original writing circuit to write said original image data by a predetermined number of pixels a time (e.g., "the raw image data is stored into

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an appropriate number of input buffers 538 (column 9, lines 7-8)”), wherein the predetermined number of pixels a time is the number of pixels each input buffer stores), and

a second original writing circuit to write original image data stored in said buffer to said main memory by said predetermined number of pixels a time (e.g., column 10, lines 13-21 wherein RAM spooler 1 writes all of the image data to the main memory, therefore the predetermined number of pixels a time is all of the pixels of original image data).

In regards to claim 22 Anderson discloses a digital camera according to claim 21, wherein

said buffer includes an original area to store at least said predetermined number of pixels of original image data (e.g., “the raw image data is stored into an appropriate number of input buffers 538 (column 9, lines 7-8)”, wherein the predetermined number of pixels of original image data is all of the pixels of original image data).

In regards to claim 24 Anderson discloses a digital camera according to claim 13, further comprising

a recorder to record original image data and thumbnail image data stored in said main memory to a recording medium (e.g., removable memory spooler 2; column 10, lines 40-44).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. Claims 23, 25, 26, and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 5,933,137 to Anderson).

In regards to claim 23 Anderson discloses a digital camera according to claim 13, wherein

said memory is a DRAM (e.g., RAM disk 532 portion of the DRAM 346 shown in Fig. 4A).

Anderson does not disclose that the memory is a SDRAM. Note that it is very well known and established in the art to use an SDRAM since the memory is faster than DRAM. Official notice is taken. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have used an SDRAM in order to have a faster memory.

In regards to claim 25 see examiners notes on the rejection of claim 13. Note that Anderson does not explicitly disclose nor preclude outputting the original image data by a raster scan scheme however it is very well known and established in the art to output image data by a raster scan scheme in order to output pixel information from every location on the image sensor. Official notice is taken. Therefore it would have been obvious to one of ordinary skill in the art

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at the time of the invention for Anderson to have output the original image data by a raster scan scheme in order to output pixel information from every location on the image sensor.

In regards to claim 26 see examiners notes on the rejection of claim 14.

In regards to claims 33-36 see examiners notes on the rejection of claims 21-24 respectively.

3. Claims 15, 16, 18-20, 27, 28, 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 5,933,137 to Anderson) in view of (USPN 5,138,454 to Parulski).

In regards to claim 15 Anderson does not disclose nor preclude a horizontal or vertical counter.

It is known in the art to have a digital camera comprising a horizontal counter to count a horizontal number of pixels of said original image data and output a horizontal count value as taught by Parulski in elements 127 and 128 of Fig. 5. Further it is known in the art to have a vertical counter to count a vertical number of lines of said original image data and output a vertical count value as taught by Parulski in elements 125 and 126 of Fig. 5.

Note that while Anderson discloses that the thumbnail image data is taken from the frame buffers 536 to generate the thumbnail image data since the data stored in the frame buffers 536 is already reduced for display on the LCD screen by the live view generation process 612 and further discloses a resizing process 616 for generating the thumbnail image data, Anderson does not describe the process of the thinning the original data for either the live view generation process 612 or the resizing process 616 (column 5, line 56 – column 6, line 53; column 9, lines 14-38). Therefore it would have been obvious to use the thinning techniques disclosed in

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Parulski, namely using vertical and horizontal counters, in order to afford “rapid display of a selected low resolution portion of the photoprint image” and “permits displaying the contents of the ... image in a variety of formats for optimizing the manner in which the imaged photoprint may be digitized and stored (column 3, lines 14-21, Parulski).”

In regards to claim 16 Anderson in view of Parulski discloses a digital camera according to claim 15, wherein

said processor includes an extracting circuit to extract predetermined pixel data from said original image data based on said horizontal count value and said vertical count value (e.g., column 8, lines 9-27; column 9, line 63 – column 10, line 37; Fig. 7).

In regards to claim 18 Anderson in view of Parulski discloses a digital camera according to claim 15, wherein

said first thumbnail writing circuit includes a data writing circuit to write said thumbnail image data to said buffer based on said horizontal count value and said vertical count value (e.g., “the addressing of memories 121 and 122 is controlled in accordance with the count values of line (row) and pixel (column) clock counters 125, 127 and 126, 128 respectively (column 9, lines 63-66).”)

Note that the count values disclosed by Parulski are used in order to generate the reduced image data and thus produce the thumbnail image data as taught by Anderson. As such, based on the count values, namely the counters counting all the pixels of the original image data, the thumbnail image data is created and thus can be stored in the buffer as taught by Anderson. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the first thumbnail writing circuit taught by Anderson to have

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included the data writing circuit in order to be able to make use of the thinning techniques of Parulski.

In regards to claim 19 Anderson in view of Parulski discloses a digital camera according to claim 15, wherein

said first thumbnail writing circuit includes a request output circuit to output a request or read out said thumbnail image data when said vertical counter counts up the number of lines corresponding to said first predetermined lines and said horizontal counter counts up the horizontal number of pixels on said original image data (e.g., Similar to the discussion in the rejection of claim 18, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the request output circuit to read out the thumbnail based on the completion of counting all of the pixels of the original image data as taught by the FRAM MODE of operation disclosed by Parulski (column 9, lines 5-27) in order to output thumbnail image data that is complete.)

In regards to claim 20 Anderson in view of Parulski discloses a digital camera according to claim 19, wherein

said second thumbnail writing includes a thumbnail reading circuit to read said thumbnail image data out of said buffer in response to said read request (e.g., The thumbnail reading circuit is an inherent feature of the second thumbnail writing circuit because the thumbnail data can not be written to the main memory unless it is somehow read out of the buffer.)

In regards to claims 27, 28, 30-32 Anderson in view of Parulski see examiners notes on the rejection of claims 15, 16, 18-20 respectively.

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4. Claims 17 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 5,933,137 to Anderson) in view of (USPN 5,138,454 to Parulski) in further view of (USPN 4,745,577 to Ogawa et al).

In regards to claim 17 Anderson in view of Parulski does not explicitly disclose nor preclude a digital camera according to claim 16, wherein

said extracting circuit includes a plurality of registers to shift said original image data by a predetermined number of pixels a time and a register controller to intermittently enable said registers based on said horizontal count value and said vertical count value

It is well known in the art to intermittently enable a plurality of registers to shift the image data by a predetermined number of pixels a time as taught by Ogawa et al, herein Ogawa. Anderson in view of Parulski discloses the use of RAM memories shown in Fig. 5 to extract predetermined data from said original image data. Ogawa discloses using a plurality of shift registers to read data into and data from a video RAM in order to facilitate parallel access to the video RAM (column 1, lines 36-41).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have included a plurality of registers to shift original image data by a predetermined number of pixels a time, namely the number of pixels able to be held in the shift register in order to facilitate parallel access to the video RAM. Note that Parulski discloses that "the addressing of memories 121 and 122 is controlled in accordance with the count values of line (row) and pixel (column) clock counters 125, 127 and 126, 128 respectively (column 9, lines 63-66)," wherein the reading and writing of a RAM is controlled in accordance with the addressing and thus the registers are controlled by the addressing which is based on the count values. Ogawa

discloses that exclusive registers are used, or enabled, based on whether a read or a write operation is being preformed, thus if the count values are less than all of the pixels of original image data a write operation would be preformed in order to write the data to be used as thumbnail image data into the RAM, if the count values are equal to all of the pixels of original image data a read operation would be preformed in order to obtain the image data to be used as thumbnail image data from the RAM (column 3, lines 59-63).)

In regards to claim 29 see examiners notes on the rejection of claim 17.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(USPN 6,188,727 to Lee)

(USPN 5,668,604 to Takano et al)

(USPN 5,402,248 to Sato et al)

(USPN 6,505,964 to Ando et al)

(USPN 6,177,957 to Anderson)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian C. Genco who can be reached by phone at 703-305-7881 or by fax at 703-746-8325. The examiner can normally be reached on Monday thru Friday 8:00am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone numbers for


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the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center 2600 customer service office whose telephone number is 703-306-0377.

Brian C Genco
Examiner
Art Unit 2615

March 10, 2003



AUNG S. MOE
PATENT EXAMINER